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ABSTRACT

A study was conducted to determine the factors that account for the sustained and unusually high rate of participation in tuition-assisted education by Polaroid employees. Information was gathered by interviews with Polaroid management officials in the Human Resources Development Group; staff of the Education and Career Planning Department; and employees who have participated in the program; review of internal policy; and library research. The study examines the structure, provisions, and administration of the company plan; the experience and motivations of plan managers and plan participants; and the corporate context in which the plan operates. Findings show that the company has a systematic and comprehensive series of courses and programs for its hourly and salaried employees, including internal and external programs, organizational development, and career and education counseling. The Tuition Assistance Plan is an integrated component of this overall employee development program. It pays 100 percent (for full-time employees) of tuition in advance for a broad range of company approved courses. Polaroid encourages employees to participate in the Plan by educational counseling, publicity in house organs, and word of mouth. According to Polaroid figures, approximately 6,000 (50 percent) of the corporation's domestic employees participated in an average of one-and-one-half internal or external education and training activities during 1977-78. Ten percent of the eligible domestic workforce participated in the Tuition Assistance Plan, and of these, 40 percent were from the hourly ranks. Factors contributing to this high rate of participation appear to be the paid tuition, supervisory encouragement of education and training, and an atmosphere that emphasizes the rewards of education. (KC)

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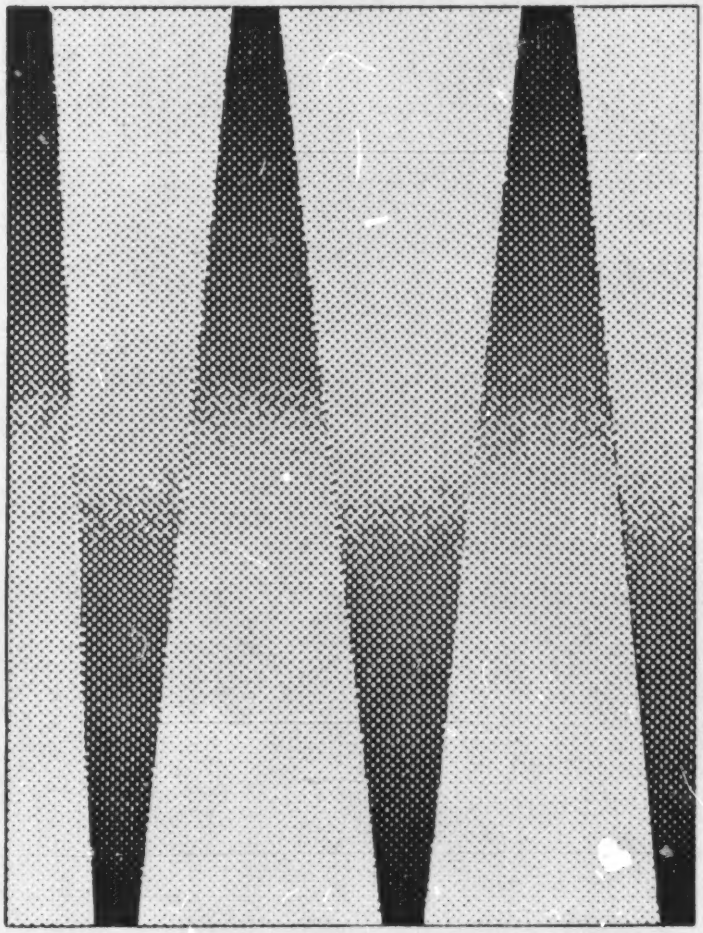

Polaroid Corporation's Tuition Assistance Plan: A Case Study

CE 028 401

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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September 1979

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This case study would not have been possible without the cooperation and interest of Polaroid Corporation officials and employees. Director of Human Resources Development Donald Fronzaglia generously shared his time, knowledge and enthusiasm and provided access to his staff and to Tuition Assistance Plan participants for the extensive interviews that form the backbone of this study. Tuition Assistance Administrator Toni Gallagher arranged interviews with employees, answered my many questions and made me feel very welcome. Lee Regal, Manager of the Education and Career Planning Department and Senior Education Training Specialist Ed Dubois explained the evolution of Polaroid's human resource development programs and provided many helpful documents and program materials. Particular thanks should also go to the Polaroid employees who generously gave their time for interviews.

Invaluable counsel on the design of the study and the case study report was provided by project staff and consultants.

Kathleen Knox
September 1979

PREFACE

Adult Americans have been participating in formal education and training programs in record numbers in recent years. The trend is generally viewed as a positive development.

There is a rub; it involves the low profile cast by working class Americans in the ranks of participants in the adult learning boom. The hourly assembly line worker, the skilled craftsperson, the salesperson, the secretary ... those alternately called the blue and pink collar workers ... by all available estimates are not participating at levels even remotely proximate to their numbers in the population.

There is within this situation many a paradox. Estimates suggest that somewhere between 40% and 70% of this population are "would-be-learners", that is people who say they want to participate in education and training programs. Yet the several studies of participation by working Americans in tuition assistance programs (in which financial barriers to continuing education are largely overcome) have consistently revealed overall use rates in the range of 4-5%.

That one of the single largest audiences and potential constituencies for continuing education and training programs is currently not taking advantage of existing opportunities presents a significant public policy challenge. Especially is this so because of the importance of this large segment of society to the future productivity of individual enterprises and the broader economy. A question that emerges in various forms is: Where does the "problem" lie? Is the "problem" in the available opportunity or is it in the "would-be-learner" audience? Many observors would point to that 4% use rate figure with resignation. The evidence presented in this paper and in other case studies in this series suggests a need to look more closely at how the opportunity--tuition assistance for education and training -- is structured.

The programs described in these studies have attained rates of worker participation far in excess of national norms. They offer examples of promising programs and practices to those in industry, unions, education institutions, and government concerned with enhancing education and training opportunities for workers.

In the pages that follow, Kathleen Knox, Senior Associate at the National Manpower Institute, describes and analyzes the Human Resources Development Programs of the Polaroid Corporation with particular attention to the corporation's tuition assistance plan. Of particular interest is the developmental perspective which informs the planning and implementation of Human Resource Development programming within the corporation, and the degree to which Polaroid had integrated tuition assistance with its overall education and training approach.

The study itself is based on extensive interviews with Polaroid officials and Human Resources Development staff and with Polaroid employees who have participated in both internal education and training programs and external education supported by Tuition Assistance. Library research and review of Polaroid policy and program documents supplemented the interview data. The questions asked were informed by many sources, principal among them being the members of NMI's National Advisory Committee and the findings from a major survey research effort carried out by NMI in 1976 and 1977 which sought to shed light on the extent of negotiated tuition assistance programs and factors contributing to the low rates of worker utilization of tuition assistance benefits. (The results of this effort are reported in summary form in An Untapped Resource: Negotiated Tuition Aid in the Private Sector - Charner et. al., 1978).

This and its companion studies of highly utilized tuition assistance programs -- the Educational Opportunities Plan of Kimberley-Clark Corporation and The Education Fund Programs of AFSCME District Council 37 -- were begun in earnest nearly a year ago. These are the first of a series of reports on promising programs and practices and critical public policy issues in worker education and training initiated under NMI's Project on Worker Education and Training Policies which is financed (under contract) by the National Institute of Education.

These case studies were importantly influenced in their content and form by two considerations. The first concerned the slender body of literature on tuition aid, in general, and promising programs and practices in tuition aid, in particular. With phenomenal growth in the incidence of tuition aid programs in private industry and the public sector, and the consequent growth in the potential importance of tuition aid as a resource to working Americans, employers, unions, and those education institutions seeking to better reach the adult learning audience, enhanced knowledge about this resource and how to make it work appeared to us to be an urgent need. These case studies were designed to contribute to that knowledge base, with a view to meeting the interests of a differentiated audience of employers, unions, and education officials.

The second consideration involves the methods employed to develop these case study reports. Our purpose was to fathom how these programs are designed, how they function, and how well they meet the purposes of program users and sponsors; and then to discuss those features in the contextual environment and in the program's "operant mechanics" that seem to account for the high worker use rates. Our purpose was not to test a theory. It is premature for that, given the complex social situations and complex social organizations involved. Because our interest was to enhance discovery and to provide texture in the description, we relied heavily on a qualitative field research approach using a blend of techniques; observation, informant interviewing, document analysis, and small group discussions. The method is costly, rigorous, and demanding on the time of researcher and respondent alike. It is our belief that the results are enhanced by the method. We hope that the reader agrees.

A prerequisite in this kind of case study is access to people knowledgeable about the program's administration, to users of the program, to people outside the sponsoring organization with informed perspectives about the program, and to documentary information. NMI was granted generous access to such people and records by senior officials of Polaroid Corporation. We are indebted to these officials and to the staff members and participants of the programs who shared their experiences, perceptions, and knowledge with us.

Gregory B. Smith
Director
Worker Education
and Training Policies Project

POLAROID CORPORATION'S TUITION ASSISTANCE PLAN
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EXECUTIVE SUMMARY
POLAROID CORPORATION'S TUITION ASSISTANCE PLAN
A CASE STUDY

Purpose of Study and Methodology

This study was undertaken by the National Manpower Institute, with the Polaroid Corporation's cooperation and assistance, to try to determine the factors that account for the sustained and unusually high rate of participation in tuition-assisted education by Polaroid employees. It is based on interviews with Polaroid management officials in the Human Resources Development Group, and staff of the Education and Career Planning Department. In addition, individual interviews were conducted with twelve Polaroid employees who have in the past or are presently participating in educational programs financed by the Tuition Assistance Plan. Review of internal policy and program documents provided by Polaroid and library research supplemented the interview data. Because of NMI's particular interest in educational opportunities for hourly workers, the study focuses primarily on the relationship between the Tuition Assistance Plan and Polaroid's overall educational programs for hourly workers. The study examines the structure, provisions, and administration of the Plan; the experience and motivations of Plan managers and Plan participants; and the corporate context in which the Plan operates. It is hoped that its findings will be useful for public and private policy-makers concerned with education and training policy issues, particularly for working adults.

Company Context

Polaroid's Tuition Assistance Plan cannot be understood without taking

into account the origins and history of this unusual American corporation. The company was founded (in fact, if not in name) in 1932 when Edwin Land left Harvard University as a sophomore to establish the basement laboratory in Cambridge, Massachusetts that in 1937 became the Polaroid Corporation.

Land's motivations in setting up his new enterprise were not primarily economic; rather, Land wanted two things: to create a setting in which he could see his inventions through from inspiration to production and to create a model business enterprise -- one that provided "a worthwhile and dignified work experience for all his employees."[1] These intentions have significantly shaped the Polaroid Corporation throughout its half century of growth and change. Polaroid has remained an economic enterprise in which "other motivations (than profit) are of compelling importance."[2]

For over 50 years, the corporation has been in the forefront of development efforts in the photographic field and more recently in the manufacture of new cameras and other instant photographic products.

Since the invention of the Land Instant Camera in 1948, the company has enjoyed steady and sustained growth:

> Since that landmark year, the company's workforce has grown at an astounding rate. For every employee who worked at Polaroid in 1948, there are 45 employees today, a total of close to 16,000. One and a half million dollars in 1948 sales has soared to more than a billion dollars in annual sales today. Earnings -- a negative figure in 1948 -- were more than 92 million last year, and international sales, not dreamed of in 1948, were more than $400 million last year.
>
> Polaroid has expanded (from 750 Main Street in Cambridge) to more than 50 locations in Massachusetts, a network of eight distribution and service centers across the country and a number of manufacturing and distribution subsidiaries overseas.[3]

At the present time, Polaroid is the third largest employer in Cambridge, Massachusetts, behind Harvard University and the Massachusetts Institute of

Technology. The company's new manufacturing plants are dotted along Route 128, the beltway that circles Boston, and many of the employees in these facilities are drawn from nearby suburbs (Watertown, Needham, Waltham) as well as from the center city of Boston. Over the past five years, these new plants have been filled with thousands of new employees recruited to meet Polaroid's production needs. At the present time, these hourly workers constitute 70% of the Polaroid workforce.

As a highly technical and innovative company, Polaroid needs employees who understand what they are doing, who can see how their tasks fit together to form a whole, who can work with management to improve the product, and who have the theoretical and conceptual skills to grow with their jobs and within the corporation.[4] To train this kind of workforce, Polaroid has developed over the years a systematic and comprehensive series of courses and programs for its hourly and salaried employees. These programs and courses include, among others:

- Internal education and skills training programs for both hourly and salaried employees;
- Management development programs and workshops for supervisors and managerial personnel;
- Technology-based programs and seminars for technical and nontechnical personnel;
- Organizational development courses and programs for managerial personnel and team leaders; and
- Career counseling workshops to assist Polaroid employees and supervisors in determining career goals and methods for achieving them.

The Tuition Assistance Plan is an integrated component of this overall employee development program. The Plan exists to finance external education programs independently undertaken by Polaroid employees as well as company-initiated training programs which require external education at area colleges, univer-

sities, or technical schools.

Provisions and Administration of the Plan

The Polaroid Tuition Assistance Plan prepays 100% of the costs of approved educational programs successfully completed by Polaroid employees. All half and full-time employees are eligible to participate in the plan, and the amount of assistance available is prorated based on employees' scheduled hours of work (40 hours = full; 30 = 3/4 payment, etc.). Those working less then 20 hours per week are not eligible.

The guidelines for participation are as follows:

1. Acceptable Schools

   - Schools are selected on the basis of tuition costs and/or relevance of programs to Polaroid's needs

2. Acceptable Courses and Programs

   - Any basic course in reading, writing, and arithmetic
   - Courses or programs which will improve the employee's skill on his/her present job as defined in an approved job description
   - Courses or programs which relate to the next job in the employee's job family as described in the Polaroid classification booklet and/or as defined in an approved job description
   - Courses or programs required or relevant to a trade or craft licensing or certification program appropriate to the individual's career and specific to Polaroid's need for the trade or craft
   - Specific degree programs (Associate and Bachelor's degrees and graduate degrees). All engineering, science, mathematics, accounting, finance, and secretarial programs. All general business management, marketing, transportation, economics, journalism, nursing, and criminal justice programs if currently job related. Courses in the College of Education or Public Administration curriculum are not permitted under the graduate degree program.

The Plan is administered as one of unit of Polaroid's Human Resource

Development Group. Its budget of approximately $450,000 per year is submitted as part of the total HRD budget; the Plan is corporately financed, as are all HRD activities.

Special Features

Educational Counseling

All employees entering new tuition-assisted programs are required to receive educational counseling before they may receive assistance under the Plan. The purpose of the counseling is to ensure that the employee's educational plans are within the guidelines of the Tuition Assistance Plan, to suggest alternatives if they are not, and to help the employee select a school that is appropriate to his/her interests and convenient to his/her home or workplace. Polaroid's policy is to make the counseling and application process as convenient for the employees as possible. Counseling is done at the employee's work site during or immediately following his/her work day.

Publicity

The Tuition Assistance Plan is widely publicized through formal brochures, personnel policy handbooks, and Polaroid in-house media, e.g., The Polaroid Newsletter and various division and committee publications. Supervisors are expected to assist their workers to formulate career and educational plans and determine ways to implement them. Informal publicity is also widespread. Approximately 50% of Polaroid's domestic workforce is engaged in at least one education or training activity during a given year, and word of the Plan spreads through conversation on the job and during breaks. One employee interviewed during the study said, "Education is just in the air at Polaroid."

Plan Effectiveness

Polaroid's education programs are based on the premise that the husbanding

and developing of the Polaroid workforce is as important for corporate success as control and development of machines and materials.[5]

Polaroid's employee participation in both internal and external education and training programs is astoundingly high. According to Polaroid figures, approximately 6,000 (50%) of the corporation's domestic employees participated in an average of one and one-half internal or external education and training activities during 1977-78. (These activities include: skills training, management development, in-house educational programs, career development, and external courses or degree programs.) Ten percent of the eligible domestic workforce participated in the Tuition Assistance Plan, and of these, 40% were from the hourly ranks.

What is particularly interesting about Polaroid is the fact that a relatively high rate of participation is sustained in the presence of extensive opportunities for internal educational activity. The findings of this study indicate that both management officials and Plan participants attribute high participation rates to two major Plan provisions:

1. 100% payment; and
2. prepayment of tuition costs.

The provision of career and educational counseling services and the emphasis on supervisory encouragement of education and training also appear to have an important effect on employee participation in the Tuition Assistance Plan. This confirms the findings of recent studies that lack of information about job options and educational opportunities is an important factor inhibiting worker participation in education.

High level management commitment to human resource development and to the provision of promotion opportunities for hourly workers are not conditions specific to the Polaroid Corporation or to its Tuition Assistance Plan.

They do, however, appear to play a large role as incentives to employee participation in education. Both factors appear to be crucial in the formation of a working environment that both encourages and rewards employee investment in education and training. This final point may bear some emphasis: Polaroid is an unusual organization, with a charismatic founder and a history that has the makings of an American legend. Its growth as a corporation has been steady and sustained for over 20 years, and it is a high-wage, technologically sophisticated company, dependent for its continuing success on the creativity, innovativeness, and technical skills of its employees. While these factors do not reduce the significance of Plan provisions and administration in accounting for the success of Polaroid's Tuition Assistance Plan, they do have an important bearing on the high level of employee participation in educational activity.

FOOTNOTES

[1] Carl Olshaker, The Instant Image: Edwin Land and the Polaroid Experience, (New York: Stein and Day, 1978), p. 46.

[2] Ibid, p. 30.

[3] Polaroid Corporation, "Spectacular Growth takes Polaroid from 730 Main Street around The World," The Polaroid Newsletter, Vol. XXIII, No. 16, Dec. 8, 1978, p.6.

[4] Polaroid Corporation, "Building Intellectual Capital: The Role of Education in Industry," (Polaroid Corporation, mimeo, 1978), p. 7.

[5] Ibid, p. 8.

I. INTRODUCTION

In December 1957, at the annual meeting of employees, Dr. Edwin Land, Founder, Chairman of the Board, and President of the Polaroid Corporation, announced the formation of an "Office of Career Growth". Its purpose was to assist Polaroid employees to identify appropriate career goals and to provide financial assistance for educational programs undertaken to achieve these goals.

The original provisions of what is now called the Tuition Assistance Plan allowed for the reimbursement of up to $200 per semester to any employee successfully completing an educational course or program approved by the tuition assistance office. All Polaroid employees were eligible to participate in this plan. Twenty years later, in 1979, the plan provides for the prepayment of 100% of tuition costs for each successfully completed course or program. As these figures indicate, the Tuition Assistance Plan has undergone numerous transformations since its inception in 1957. The provisions and administration of the plan have changed as Polaroid itself has grown from a small research-oriented company to a large manufacturing enterprise. What has remained constant over the years is the high rate of employee participation in Polaroid's plan. According to company records, between 8 percent and 10 percent of Polaroid's eligible workforce has consistently participated in education and training supported by the plan each year. Moreover, although the participation rate has remained stable, the actual numbers of employees served have

grown significantly over the years as Polaroid has increased its workforce from approximately 2,000 in 1957 to 16,000 in 1978.

This study was undertaken by the National Manpower Institute, with the Polaroid Corporation's cooperation and assistance, to try to determine the factors that account for the sustained and unusually high rate of participation in tuition assisted education by Polaroid employees. It is based on interviews with Polaroid management officials in the Human Resources Development Group, and staff of the Education and Career Planning Department. In addition, individual interviews were conducted with twelve Polaroid employees who have in the past or are presently participating in educational programs financed by the Tuition Assistance Plan. Library research and review of internal policy and program documents provided by Polaroid supplemented the interview data. Because of NMI's particular interest in educational opportunities for hourly workers, the study focuses primarily on the relationship between the Tuition Assistance Plan and Polaroid's overall educational programs for hourly workers. The study examines the structure, provisions, and administration of the plan, the experience and motivations of plan managers and plan participants, and the corporate context in which the plan operates. It is hoped that findings in the study will be useful for public and private policy-makers concerned with education and training issues - particularly for working adults.

II. THE CORPORATE CONTEXT

Polaroid's Tuition Assistance Plan cannot be understood without taking into account the origins and history of this unusual American corporation. The company was founded (in fact, if not in name) in 1932 when Edwin Land left Harvard University as a sophomore to establish the basement laboratory in Cambridge, Massachusetts that in 1937 became the Polaroid Corporation. Land left Harvard to continue his research on light polarization and to develop an enterprise that would market the new substance he had invented and named "polaroid." Land knew that this new substance could be used in myriad ways (from sunglasses to automobile headlights) and he wanted to create an environment to support his research and development interests. Consequently, his motivations in setting up his new enterprise were not primarily economic. Rather Land wanted two things: to create a setting in which he could see his inventions through from inspiration to production and to create a model business enterprise - one that provided "a worthwhile and dignified work experience for all his employees."[1] These intentions have significantly shaped the Polaroid Corporation throughout its half century of growth and change. Polaroid has remained an economic enterprise in which "other motivations (than profit) are of compelling importance."[2]

As an organization, however, the company has changed enormously since its incorporation 52 years ago. It has been in the forefront of development efforts in the photographic field and recently in the manufacture of new cameras and other instant photographic products. The most recent

inventions to reach the market include the SX-70 camera and the instant movie camera system (Polavision). Polaroid corporate sales in 1978 topped $1.3 billion. The 1978 Annual Report reaffirms Polaroid's commitment to "the expansion of instant photography through the preparation of products and systems that will help maintain (our) leadership in the field."

Edwin Land's invention and marketing of the Land camera in 1948 was the major turning point in Polaroid's history. This first "instant" camera broke all sales records and catapulted Polaroid into the ranks of the "major consumer product producers."[3]

> Since that landmark year, the Company's workforce has grown at an astounding rate. For every employee who worked at Polaroid in 1948, there are 45 employees today, a total of close to 16,000. One and a half million dollars in 1948 sales has soared to more than a billion dollars in annual sales today. Earnings -- a negative figure in 1948 -- were more than 92 million last year, and international sales, not dreamed of in 1948, were more than $400 million last year.
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> Polaroid has expanded (from 750 Main Street in Cambridge) to more than 50 locations in Massachusetts, a network of eight distribution and service centers across the country and a number of manufacturing and distribution subsidiaries overseas.4

At the present time, Polaroid is the third largest employer in Cambridge, Massachusetts - behind Harvard University and the Massachusetts Institute of Technology. The Polaroid headquarters, imposingly set along one side of Technology Square in Cambridge, are near neighbors to MIT, and both the location and the address emphasize the corporation's ties with the Boston scientific community. Polaroid's new manufacturing plants are dotted along Route 128, the beltway that circles Boston, and many of the employees in these facilities are drawn from nearby suburbs (Watertown,

Needham, Waltham) as well as from the center city of Boston. Over the past five years these new manufacturing plants have been filled with thousands of new employees recruited to meet Polaroid's production needs. At the present time, these hourly workers constitute 70% of the Polaroid workforce.

As Polaroid has changed and grown, so has the composition of the workforce and the education and training needs of the company. The shape, structure and provisions of Polaroid's Tuition Assistance Plan have been modified over the years in response to these larger transformations in the corporation. But throughout Polaroid's 50-year history, Edwin Land has continued to be a powerful and pervasive force in the life of the company he founded. Until recently, he was not only Chairman of the Board and President, but also Director of Research. Not until 1975 did he relinquish the presidency to his long-time associate, William McCune, Jr. Land's commitment to lifelong learning and to employee development and growth has been a crucial factor in the initiation and continuation of Polaroid's human resource development program.

III. HUMAN RESOURCE DEVELOPMENT AT POLAROID

Goals and Objectives

The Polaroid Corporation is a highly technical and innovative company. Continued success requires that it stay in the forefront of research and development in the field of instant photography and that its products attain high standards of quality. For these reasons, Polaroid wants employees

> who understand what they are doing; who can see how their tasks fit together to form a whole; who can work with management to improve the product; and who have the theoretical and couceptual skills to grow with their jobs and with the corporation.[5]

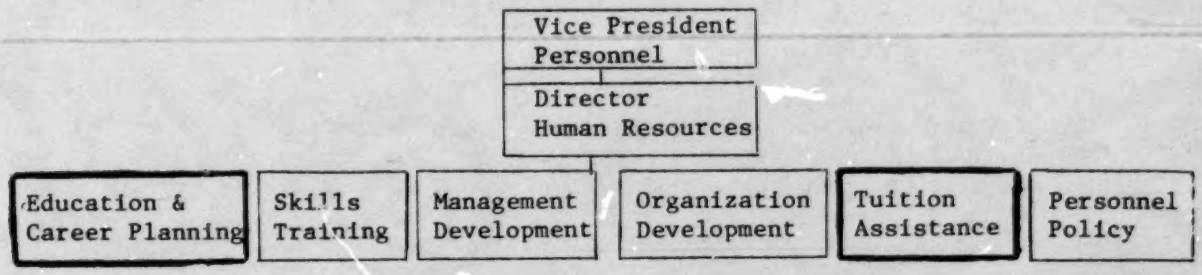
To train this kind of workforce, Polaroid has developed over the years a systematic and comprehensive series of courses and programs for its hourly and salaried employees. These programs and courses include, among others:

- Internal education and skills training programs for both hourly and salaried employees;
- Management development programs and workshops for supervisors and managerial personnel;
- Technology based programs and seminars for technical and non-technical personnel;
- Organizational development courses and programs for managerial personnel and team leaders; and
- Career counseling workshops to assist Polaroid employees and supervisors in determining career goals and methods for achieving them.

The Tuition Assistance Plan is an integrated component of this overall employee development program. The plan exists to finance external education programs independently undertaken by Polaroid employees as well

as company-initiated training programs which require external education at area colleges, universities or technical schools.

All of the programs outlined above, including the Tuition Assistance Plan, are developed and administered by Polaroid's Human Resources Development group. As the chart below indicates, the Human Resources Group is made up of six separate departments, each responsible for one aspect of Polaroid's employee development program. The managers of each department report to the Director of Human Resources Development, who in turn reports directly to the Vice President for Corporate Personnel.



Although the Tuition Assistance Plan is administered by a separate unit within the Human Resources Development Group, it is functionally and programmatically interrelated with the Education and Career Planning Department. This department is responsible for Polaroid's career planning courses and workshops and for designing and implementing educational programs for hourly workers.

The broad goal of the Human Resources Group is "to balance the growth of the individual with the changing needs of the company."[6] More specifically, Polaroid seeks to engage employees in a continuing educational

process which will help ensure their productivity and growth as Polaroid employees. Listed below are the published goals of Polaroid's Education and Career Planning Department. They indicate the ambitious and comprehensive nature of Polaroid's employee development effort:

- To re-involve adults in education
- To assist individuals with the educational portion of their career plans through education and career counseling
- To prepare employees for more advanced education in local schools and colleges and cover costs through the Tuition Payment Plan
- To provide relevant programs and courses within the company to meet specialized educational needs of individuals and departments
- To continue a better return on educational expenditure through the active involvement and experience of employees at all levels of the company in the educational process
- To link literacy, skills training and other forms of internal education for employees with brief educational experiences to improve their functioning in the workforce
- To make all in-house education for hourly and salaried employees relevant in content, more active in method and more functional in results.7

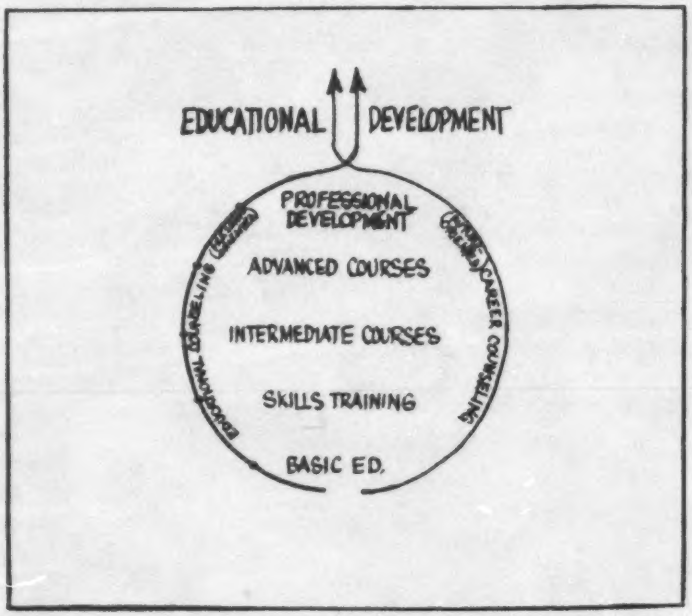
The following section will examine the programs of the Education and Career Planning Department to illustrate how Polaroid uses the Tuition Assistance Plan to achieve these employee development goals, particularly as they pertain to hourly workers.

Development Programs for Hourly Workers

The educational programs developed by the Education and Career Planning Department and the Skills Training Department are designed to enable hourly employees who so desire to move from in-house education and training programs to external education programs (supported by Tuition Assistance)

if the programs they select are eligible under the provisions of the Tuition Assistance Plan. To achieve this goal the Education Department has designed a comprehensive series of courses that begin with basic concepts (and basic skills in literacy and mathematics) and extend to advanced levels of course work. The Math Skills Series, for example, includes these courses: Beginning Arithmetic, Intermediate Arithmetic, Advanced Arithmetic, GED (high school equivalency) Mathematics and Transitional Math. As the course titles indicate, the series begins "at the beginning" and takes the student to the level of math skills expected of a high school graduate. Supplementing these graduated series of courses are workshops designed to help employees develop study skills needed for college-level work; GED courses to prepare employees for the GED examinations; and workshops to prepare employees to take the CLEP examinations. Career and educational counseling services are also available for all employees who request help.

The graphic below illustrates the steps in Polaroid's education and career development process: [8]



It is anticipated that employees who have completed this process will be prepared to take responsibility for their own career growth and further education. For those who choose to go on to college-level work, the Tuition Assistance Plan is available to support programs eligible under the plan.

The Human Resources Development Group is also responsible for designing in-house training programs to meet the manpower needs of the company. These training programs are vehicles for upgrading the skills of hourly workers, filling the manpower needs of the company from inside, and providing promotion opportunities to hourly workers. At the present time, Polaroid is running three internal programs for hourly workers which require external education. Designed to fill manpower needs for skilled tradespeople, supervisors, and technical personnel, each program employs the Tuition Assistance Plan to support the required external education or training. Each program, briefly described below, prepares successful participants to take new jobs in skill areas where Polaroid has identified manpower shortages:

1. Polaroid Trades Apprentice Program

This is a three-year program requiring on-the-job training at various sites and shifts, up to 300 hours of internal skills training courses and 700 to 900 additional hours of technical training at a Polaroid approved educational institution under the Tuition Assistance Plan. All employees with one year's seniority at Polaroid are eligible to apply for this program. Those who successfully complete the program are guaranteed

jobs in the skilled trades at Polaroid. Competition for these slots is stiff with an average of 40 people accepted from an applicant pool of approximately 300.

2. Polaroid Supervisor Training and Education Program (STEP)

The objective of this program for hourly workers is "to provide a transition from doing to leading by acquisition of college level education in science, business, and the humanities; skill development in Polaroid technology, human relations, and administration; and job experience."[9] Selected candidates spend approximately 240 hours per year (for two years) in internal training programs, and 120 hours per year in an external education program at Boston University, the latter supported by tuition assistance. Upon successful completion of this program, participants are eligible to enter their junior year at Boston University. In the second year of the program, trainees are given supervisory responsibilities; upon graduation they are guaranteed permanent supervisory positions. This program is the primary means for hourly employees to achieve supervisory rank. As is the Trades Program, STEP is highly competitive and selective, with 30 participants selected from approximately 300 applicants.

3. Polaroid Internal Technical Co-op Program (PITCP)

This program is the newest of the three "tuition-assisted" programs. Its first class was inducted January 1978 into an experimental program designed to achieve two objectives:

a. To provide an opportunity for a limited number of regular employees to earn a B.S. degree from Northeastern University in one of several technical disciplines while maintaining most of their base income and

b. To provide the corporation with a vehicle to fill a portion of its growing demand for technical supervisors, scientists, computer science specialists, and engineers with people who have experience working at Polaroid.

Graduates are expected to be competitive with the men and women recruited from outside to fill entry-level salaried positions, and participants in the program are required to remain in the top one-third of their class. Program design calls for the combining of full-time Polaroid work assignments with full-time college study periods over a specific period of time on an alternating basis. Participants will maintain three-quarters of their base pay during this period and upon successful completion of PITCP have in hand a B.S. degree (entirely financed by tuition assistance) from Northeastern University and a guaranteed salaried position at Polaroid as a technical supervisor, supervisor, assistant scientist, engineer or programmer/programmer analyst.

As the previous discussion makes evident, Polaroid is committed to employee development and to a policy of internal promotion. Implementing this policy requires provision of education and training opportunities for hourly employees so that they are prepared to undertake new jobs and greater responsibilities. The Tuition Assistance Plan is one means used by the corporation to achieve this end. The next section reviews the provisions of the Tuition Assistance Plan and describes its administration.

IV. THE TUITION ASSISTANCE PLAN

Provisions

The Polaroid Tuition Assistance Plan prepays 100% of the costs of approved educational programs successfully completed by Polaroid employees. All half - and full-time employees are eligible to participate in the plan, and the amount of assistance available is pro-rated based on employee's scheduled hours of work (40 hours = full; 30 = 3/4 payment etc.). Those working less than 20 hours per week are not eligible.

The guidelines for participation are as follows:

1. Acceptable Schools

   - Schools are selected on the basis of tuition costs and/or relevance of programs to Polaroid needs.

2. Acceptable Courses and Programs

   - Any basic course in reading, writing, and arithmetic.

   - Courses or programs which will improve the employee's skill on his/her present job as defined in an approved job description.

   - Courses or programs which relate to the next job in the employee's job family as described in the Polaroid classification booklet and/or as defined in an approved job description.

   - Courses or programs required or relevant to a trade or craft licensing or certification program appropriate to the individual's career and specific to Polaroid's need for the trade or craft.

   - Specific degree programs - Associate and Bachelor's degrees and graduate degrees. All engineering, science, mathematics, accounting, finance and secretarial programs. All general business management, marketing, transportation, economics. journalism, nursing, and criminal justice programs if currently job related. Courses in the College of Education or Public Administration curriculum are not permitted under the graduate degree program.

Tuition assistance covers 100% of the tuition fee; it does not cover registration or late fees*, certification or licensing fees*, cost of books*, drafting or laboratory supplies*, child care or transportation. Students must receive at least a grade of "D" to be eligible for tuition assistance. Several grades of "D" will cause the Tuition Assistance Administrator to request a review and schedule a counseling session with the employee/student. If the student fails or drops out of the course, he/she must return the tuition advance to the corporation.

Educational Counseling

All employees entering new tuition assisted programs are required first to receive educational counseling. The purpose of the counseling is to ensure that the employee's educational plans are within the guidelines of the Tuition Assistance Plan and to suggest alternatives if they are not, and to help the employee select a school that is appropriate to his interests and convenient to his home or workplace. The counseling is done by the Tuition Assistance Administrator and by a Senior Education/Training Specialist in Polaroid's Skills Training Department. Approximately 300 prospective students were counseled in 1977-78. Polaroid's policy is to make the counseling and application process as convenient for the employee as possible. Counseling is done at the work site during or immediately following the employee's work day.

The Application Process

Once the employee has received educational counseling, decided upon a course of study, and chosen a school, he or she requests a Tuition

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* Expenses for these items are covered for participants in the PITCP program.

Assistance Request Form from the unit secretary in his or her department or division. The employee indicates the title of the course(s) and the school to be attended; number of credit hours; degree credit hours; degree credit, if applicable; cost of the course(s); and start and finish dates. The employee's supervisor than reviews the application and indicates in what "educational" category the proposed program belongs; e.g., "present job related"; "future job related", etc. The supervisor's manager must then review and sign the form and return it to the unit secretary, who forwards the completed form to the Tuition Assistance Administrator.

Although the Tuition Assistance Request Form indicates that the manager must "approve" the request, in fact, all requests are forwarded to the Tuition Assistance Administrator. Only the Administrator, with the exception of the Director of the Human Resources Group, has the authority to approve or deny tuition assistance requests. If supervisory approval is withheld, or if the request does not meet program guidelines, the Administrator will meet with the prospective student and his or her supervisor or manager to try to arrange an alternative course of study that will meet the needs and interests of both the corporation and the employee. Employees denied assistance have the option of appealing to the Director of the Human Resources Development Group. According to the TA Administrator, however, appeals are rare. The counseling process helps ensure that the requests will be met, and the Tuition Office seeks to discover satisfactory alternatives where the initial request is denied.

Once the request has been approved, it is forwarded to the payroll department where a check is issued to the employee to cover tuition. The employee must submit grades and proof of payment to the education department within six weeks of the end of the course. If this information is not provided or if the student fails the course and does not voluntarily return the advance, the Tuition Assistance Administrator authorizes the tuition advance to be deducted from the employee's paycheck. Polaroid loses a small amount of money each year from employee abuse of the Plan. However, the loss is considered negligible in light of the major benefit pre-payment affords employees engaged in external education.

Plan Administration and Financing

The Polaroid Tuition Assistance Office is located in an old farmhouse on the outskirts of Waltham, Massachusetts, adjacent to Polaroid's recently built film manufacturing plant. The plan is administered by Toni Gallagher, who twenty-five years ago came to work at Polaroid as an assembler in the camera manufacturing division. With one clerk assistant, she administers the $450,000 tuition assistance budget under the direct supervision of Donald Fronzaglia, Director of the Human Resources Development Group. She is responsible for authorizing payment of assistance to qualifying participants; assisting employees in choosing appropriate courses, programs and educational institutions; establishing and maintaining contact with teachers and professional staff from schools, colleges, and universities in the greater Boston area; consulting on problems and answering educational program inquiries; and reporting to each Division quarterly on employee participation in the plan.

As the administrator of one unit in Polaroid's Human Resource Development Group, she meets regularly with the managers of the four other departments and with Donald Fronzaglia, the Director of the Group, to evaluate program progress, discuss problems, and design new programs. The plan is financed through Polaroid corporate headquarters and the plan budget is submitted each year as part of the total budget for the Human Resources Development Group. According to the Tuition Assistance Administrator, approximately $450,000 has been budgeted for the plan each year for the past several years.

Publicity and Outreach

The Tuition Assistance Plan is formally publicized in Education Department brochures provided to all new employees during orientation sessions. The following excerpt from the Education Department's "Programs and Courses" brochure is characteristic:

> Employees who wish to enter external degree programs in local universities or colleges, or take a job-related, tuition-sponsored course, need to talk to the Tuition Administrator, Toni Gallagher, Farmhouse, Waltham Extension 2306, for resource information. Students entering new tuition-assisted programs in Education receive educational counseling. Referrals to education counselors come from the Tuition Administrator, from supervisors, and by word-of-mouth from other employee-students. Prospective and current students are able to discuss the viability of a variety of programs within the several dozen institutions approved in Massachusetts and other states. Some of those counseled are directed to in-house courses or programs in the Education Department, as these may better meet their needs than those in outside institutions.

A more elaborate Education Department publication (which includes detailed descriptions of all department programs, courses, and services) details the procedures for plan application and approval, explains the purposes of the required "education consultation", and includes photographs of the Tuition Assistance Administrator and of Ed Dubois, the Educational Counselor.

The Plan is also publicized in yearly "Plans and Progress" meetings which are the modern descendents of Dr. Land's original yearly meetings with employees at which the Tuition Aid Plan was first announced. At these gatherings, "plans and progress" in human resource as well as product development are announced, and new and continuing education programs are described and promoted.

The Polaroid Newsletter is yet another vehicle used to publicize Education Department programs, including the Tuition Assistance Plan. The January 10, 1979 issue of the Newsletter featured two articles on the Tuition Assistance Plan. The first, "Tuition-Aid Ruled Tax-Free in 1979," described the provisions of the new tax law that exempts tuition assistance payments from an employee's taxable income, and cited the Tuition Assistance Office's efforts on behalf of the legislation:

> Polaroid's Human Resource Group supported the Senate bill by communicating directly with Senators Kennedy and Brooke and Speaker of the House Thomas O'Neil. In addition, the Tuition Assistance Office mailed over 1,000 letters to employees explaining the bill and providing them with form letters to be sent to their congressman.

The second, "Tuition Assistance Helps Employees Earn College Degrees" lists all graduating employees, indicates the degrees received,

and conveys Polaroid's congratulations:

> "We extend our heartiest congratulations to all of Polaroid's 19 graduates," said Tuition Administrator Toni Gallagher. "It's sometimes difficult to maintain good grades with a full-time job, but these graduates would probably agree that it's been worth the effort."

The January Newsletter also announces, "Education Week begins January 16 Company-wide;" the ensuing article describes yet another method by which Polaroid's Education Department publicizes its programs and services:

> Members of Polaroid's Education Department will tour the company this month to familiarize employees with the entire range of internal programs and services.
>
> Department staff members will visit various company sites January 16, 17, and 18 to explain courses being offered. They will be available in cafeterias at 750 M, 640 MD, NB, N, or 1 Main Street, Waltham and R3.

The Polaroid Newsletter is the major but not the only "news" medium carrying articles about educational programming. Company divisions and employee committees also publish newsletters which periodically focus on education issues or programs. For example, Resource is the house organ for three of Polaroid's voluntary Affirmative Action Committees. Emphasizing the achievements and needs of minority and female employees, Resource highlights education and training opportunities and activities.

> "Some 42 Employee Begin Trade Careers" (A description of the Trade Apprentice Program).
>
> "STEP spells Advancement for Hourly Employees" (profiles minority and female members accepted into the Supervisor Training and Education Program).
>
> "New WAAC subcommittee presses advancement for hourly workers" (announces subcommittee's intention "to help hourly workers learn about the experience and education necessary for each job family in the Company).

Education Department publications and Polaroid news media are the primary channels for publicizing both internal education programs and tuition assistance. However, they do not begin to exhaust the resources devoted to this purpose. Other ways in which Polaroid employees can learn about the plan include:

1. The Polaroid Career Development Series

This program, open to all employees, aids individuals in assessing where they are in terms of their values, interests, and skills. It helps them determine the career directions best matched to their own characteristics and aids each participant to develop individualized goals and workable action plans to successfully attain them.

2. Career Counseling Training for Supervisors

The purpose of this ten-hour course is to train supervisory personnel in career counseling skills so that they can better aid their employees in exploring career directions.

3. Personnel Policy and Wage Administration Seminars, and Personnel Policy Seminars for Secretaries

Both seminars, the first for supervisory personnel and the second for secretarial staff, are among the most popular of Polaroid's internal courses. They familiarize employees with Polaroid personnel policies and related programs. Education/training policies and programs are covered here. One of Toni Gallagher's responsibilities is to conduct a one-half hour session on the Tuition Assistance Plan during the PPS for secretaries.

Informal Publicity

Informal information channels also appear to play a significant role in the high visibility of Polaroid's Education Program and Tuition Assis-

tance Plan. As one employee put it, "Education is just in the air at Polaroid" and many employees learn of the Tuition Assistance Plan in conversation with fellow workers. "A multiplier effect is at work," stated one Plan participant. "There are so many people taking courses and talking to each other about them, that others are encouraged to do it (take courses), too." Several employees described how fellow workers and supervisors had helped them with homework assignments and provided emotional support and encouragement. And without exception, employees interviewed in the course of the study mentioned the importance of supervisory encouragement and advice in their decision to take external courses. Conversely, the supervisory personnel interviewed all indicated that support for employees' educational development was a crucial aspect of their responsibilities. One supervisor, herself a 45-year-old returnee to college under the Tuition Assistance Plan, "talked to each of her employees individually in the past year about their work and career goals." Although it appears that technically-oriented employees fare better then clerical workers, for example, in garnering supervisory interest and support, it was evident that educational activity is highly valued and strongly encouraged at all levels of the Corporation.

Polaroid Relationships with Area Educational Institutions

Polaroid officials appear not overly eager to establish extensive relationships with any single educational institution in the Boston area. Citing the "rapacious nature" of certain post-secondary schools, "especially when they find out that students are Polaroid employees," several Education Department staff emphasized the importance of keeping up with area educational

offerings to ensure that the students are directed to programs "that will really be useful to them." Polaroid's attempts to work with certain Boston area schools have been disappointing in several instances, and it is these experiences that have made Polaroid officials emphasize standards of performance when negotiating for new programs. According to the Director of Human Resources Development, "Many proposals (submitted by local post-secondary institutions) to do courses for Polaroid are generally substantively unacceptable and too expensive."

Despite this generally critical view, the corporation does have cooperative relationships with several area colleges and universities. The tuition-assisted training programs are all being conducted in cooperation with local educational institutions.

Employees participating in the Polaroid Internal Technical Co-op Program are enrolled full-time at Northeastern University in programs leading to bachelor's degrees in physics, chemistry, computer science, chemical engineering, mechanical engineering, or electrical engineering. Northeastern was selected as the participating university, states the PITCP brochure, "because of its lengthy experience in co-op programs, its solid educational reputation, and its receptive and enthusiastic response when approached with this program." Supervisory trainees enrolled in the Polaroid Supervisor Training and Education Program attend for two years a specially designed Education Program at Boston University, and Apprentices in the Trades Apprentice Program are completing their external education requirements at Wentworth Institute, a Boston vocational/technical school.

In addition to these relationships, arrangements are often made for instructors from nearby universities or technical schools to teach in

Polaroid's internal education program. For example, individual tutorials in Basic Skills currently are being taught by part-time outside instructors, and special programs have been arranged through Babson College in economics and computers.

In general, however, Polaroid prefers to rely on internal talent and on internal design and implementation of courses. Since 1970, the HRD Group has been training Polaroid employees to teach their fellow workers in a variety of subjects. The Polaroid literacy program was originally staffed almost entirely by Polaroid employees who formed a "peer" teaching staff; the rationale for this apporach was "the scarcity of trained professionals to teach adult literacy and the recognized value of a large reservoir of talent within the company." [10] At the present time, the Education Department offers pre-and in-service training to Polaroid employees who wish to teach in any of the corporate programs. This cultivation of in-house talent is both practical and in line with Polaroid's commitment to employee development. In-house design and implementation of courses ensures that Polaroid gets courses tailored to its specific needs, and training employees to teach them is another way to provide career opportunities for the Polaroid workforce.

V. PLAN EFFECTIVENESS

Polaroid's education programs are based on the premise that the husbanding and developing of the Polaroid workforce is as important for corporate success as control and development of machines and materials.[11] From management's viewpoint, human resource development investments will be considered successful if a large proportion of the Polaroid workforce participates in education and if the investments of the corporation and the employee pay off in productivity gains for the corporation and in job growth and career mobility for the employee. The evidence is impressive that this is happening.

Polaroid's employee participation in both internal and external education and training programs is astoundingly high. According to Polaroid figures, approximately 6,000 (50 percent) of the corporation's domestic employees participated in an average of 1½ internal or external education and training programs during 1977-78. (These activities include skills training, management development, education, career development, and external courses or degree programs.) Ten percent of the eligible domestic workforce participated in the Tuition Assistance Plan and of these, 40 percent were from the hourly ranks.

The primary reasons for employee participation in the Tuition Assistance Plan, insofar as these can be generalized from interviews with plan participants, are straightforwardly economic. Employees are seeking advancement to more responsible and better paying jobs. For many, the goal is "to break rank," the Polaroid term for moving from hourly to salaried status.

The importance of education for advancement within Polaroid appears to be widely understood among employees. According to one general supervisor, "Everyone knows that you're limited at Polaroid without a degree. A degree is necessary to move from supervisor to general supervisor, and it's even hard these days to make supervisor without a college degree." Plan participants interviewed in the course of the study consistently emphasized this point. "You can't get anywhere at Polaroid without education," was the refrain constantly repeated as was the accompanying chorus, "You can see the pay-off. People who have gotten education and assert themselves move up." Said one hourly plan participant:

> Of the nineteen people in my original training program, only six are still at Machinist Level A; the others have moved up into technical areas at higher grade levels or have moved into supervisory or personnel positions.

Management spokesmen relay the same message about the necessity of education for advancement. According to the Manager of the Education and Career Planning Department, "There is a low correlation between coming into Polaroid with a high school diploma and success at Polaroid; there is however, a very high correlation between further education and success within the company."

That education correlates with success was strikingly confirmed by 12 Polaroid employees who had been or are presently participants in internal programs or in external education supported by the Tuition Assistance Plan. Eleven of the 12 employees had started their careers at Polaroid as hourly workers. Eight of the 12 had "broken rank" into salaried positions, the most difficult leap to negotiate in any industrial enterprise. Five of these eight

were Supervisors or General Supervisors; three were, respectively, "Senior Engineer, "Personnel Associate" and "Director of Communications." Three others were technical hourly workers at the top of their grades, who anticipated "breaking rank" as soon as they had completed their college degrees. The twelfth employee interviewed, a manager, has always held salaried rank at Polaroid, but he too had participated in the Tuition Assistance Plan to enhance his career. A chemical engineer when he came to Polaroid, this employee earned his M.B.A. under the Tuition Assistance Plan. All of these employees firmly believe that the education they had undertaken at Polaroid had enhanced their opportunities for growth and mobility. Analysis of their "career and education paths" supports the interview data. Below are four representative careers, developed from interviews with employees:

1. Employee A: Present position - Diamond Tool Maker
   Entry Position - Machine Operator

   Education at Polaroid: internal courses in machine tool operator training; external courses in drafting blueprinting, metallurgy (1966-1971). Presently enrolled in B.S. program in vocational education.
   Career Goal: to become a skills training specialist at Polaroid.

2. Employee B: Present Position - Technical Aid #7 (highest hourly rank in the manufacturing division)
   Entry Position - General Operator #5

   Education at Polaroid: AA in Accounting; presently enrolled in B.S. program in computer systems.
   Career Goal: Promotion to Computer Systems Specialist upon completion of degree.

3. Employee C: Present Position - General Supervisor
Entry Position - Technician #2

Education at Polaroid: in-house courses in writing, composition, and English; external courses in quality control; and management statistics; AA in industrial management; BS in management science (1976). Presently enrolled in MBA program.
Career Goal: Manager

4. Employee D: Present Position - Personnel Associate #3
Entry Position - Medical Secretary

Education at Polaroid: B.S. in Management; currently enrolled in MBA program.
Career Goal: Top-level management

These career histories indicate that investment in education is paying off for both the employee and the company.

Management statements about the effectiveness of Polaroid's employee development efforts make the same point.

> Employee education programs are cost effective because they have a positive effect in reducing several of many corporations' most critical personnel and manufacturing problems: lost time from accidents is cut down; absenteeism is reduced; there is less downtime due to carelessness as attending behavior increases; turnover is reduced as more internal growth becomes possible; and low morale disappears.
>
> The cost of encouraging, developing and retraining good workers is less than the cost of terminating good but topped-out workers and re-hiring others.
>
> Employee education isn't really a fringe benefit like health insurance or safety shoes; though clearly the employee benefits from the service. Employee education is an integral part of job growth and in the enlightened self-interest of the employer. 12

Edwin Land does not use cost-benefit language to discuss human resource development, and he conveys, perhaps most convincingly, what investment is education and job growth can mean in human terms:

> In our laboratories we have again and again deliberately taken people without scientific training, taken people from the production line, put them into research situations in association with competent research people, and just let them be apprentices. What we find is an amazing thing.... It's like taking the tulip bulbs which have been in the cellar all winter and putting them in spring soil, - quite suddenly and amazingly they flower and they flourish. In about two years we find that these people, unless they are sick or somehow unhealthy, have become an almost pygmalion problem; they have become creative. 13

The employees interviewed in the course of this study exhibited a great deal of "flowering and flourishing." All those currently in school under the Tuition Assistance Plan said that enjoyment in learning was both an important motivation and a reward for continuing their education. "A curious thing has happened to me," said one employee who had until recently pursued only technical training:

> Everything I'm studying now is academic rather than technically oriented and practical. But I love it, particularly psychology, which I've just discovered recently. I've found that I really want to do the work, and my grade point average is at least one grade point higher than it was in high school.

Another employee mentioned the "synergy" that results when work and school are combined:

> I would have moved up faster if I had taken all my education at one sitting. But the synergy between working and going to school is tremendous and personally very rewarding.

Other employees cited the gratification they received from academic achievement. Particularly for older students and for those who had not been academic stars in high school, doing well in college was a marvelous experience, contributing significantly to their self-esteem and self-confidence. Others described enthusiastically the pleasure they experienced in

discovering the disciplines that were "right" for them. Moreover, school is helping these employees ascertain the "right" career paths and jobs for them within Polaroid. Interest, excitement, pride -- a discovery of the pleasures of learning -- all came through strongly in interviews with Tuition Assistance Plan participants.

Family life was improved as well, according to employees with families. They described the nightly ritual of "doing homework together with the kids" which increases rapport with their children and enhances the children's own motivation to learn. An older woman, currently studying for her B.S. in business administration, said that she "felt that going to school helped her relate better to her college age son." She smilingly confided that she is looking forward to inviting all her children and grandchildren to her 1981 graduation ceremony. These employees conceded that combining school, work, and family life was a difficult juggling act, but they indicated that, on balance, the economic, intellectual, and emotional benefits far outweighed the costs.

VI. SUCCESS FACTORS

This final section will examine the factors that appear to account for the success of Polaroid's Tuition Assistance Plan. Structural factors (the provisions and administration of the Plan), organizational factors (corporate climate, management attitudes, opportunity structure), and environmental factors (educational opportunities available to Polaroid employees) all play an important role in determining the high rate of participation in Polaroid's Plan.

Structural Factors

Interviews with Polaroid management officials and with plan participants indicate that the most significant structural factors affecting participation in the plan are:

1. The provision for 100% payment of tuition costs;
2. The provision allowing advance payment of tuition;
3. The provision of equity for hourly workers.

- Payment Provisions -

Management officials indicated that the current payment provisions were instituted purposely to encourage the participation of hourly workers in the plan. And in fact, neither the 100% payment provision nor the pre-payment provision was instituted until the late 1960s - when the numbers of hourly workers at Polaroid were increasing rapidly as the company expanded its manufacturing capability. The plan participants interviewed unanimously agreed that these two provisions were critical to their ability to undertake an educational program.

- The Equity Provision -

"Equity" means, in this context, that hourly and salaried employees

are entitled to the same tuition assistance benefits. Although it is difficult to determine the weight of the equity provision in assessing the success of the plan, both management officials and plan participants mentioned this provision frequently as a factor contributing to the high rate of participation by hourly workers. It appears that this provision has considerable psychological impact in that it signals management support and encouragement for hourly employees to engage in education. Hourly employees interviewed in the course of the study clearly felt that the Tuition Assistance Plan was there for them to use; they did not indicate in any way that education "was not for them." One can speculate that the equity provision, plus Polaroid's internal promotion policy, plus the company's extensive internal education program work together to encourage the participation of hourly employees in educational activities.

Several other factors appear to have less significant but still noticeable impact on the level of employee participation in the Plan.

- Application Procedures -

Applying for tuition assistance at Polaroid is a relatively simple matter. Only one form is needed, and once the employee fills out his or her part of the form and hands it to the supervisor, the employee has completed the process. The Tuition Assistance Administrator approves the request and arranges with the financial office for the prepayment of the tuition fee. Those interviewed all indicated that they found this procedure unintimidating, easy to use, and quick. A number of employees praised the efficiency and responsiveness of the Tuition Assistance Office and expressed warm appreciation of Toni Gallagher, the Tuition Assistance Administrator, for her interest and concern and for her ready availability to answer

questions, expedite requests, provide assistance in selecting schools and transferring credits, and just being there to give a word of encouragement to a discouraged or insecure student.

- Educational Advisement -

Each new applicant for tuition assistance is required to consult with the Tuition Assistance Administrator or with Educational Counselor Ed DeBois prior to the submission of the Tuition Assistance Request Form. These sessions provide an opportunity for the employee to clarify his or her educational and career goals and to determine if the proposed course of studies meets the guidelines of the plan. It also enables an employee who is considering several alternative courses or programs to receive knowledgeable help in deciding which alternative will best advance work or career goals at Polaroid. These sessions, of course, also give the Tuition Assistance Office a chance to influence the employee in the choice of programs and schools and thus provide a means by which Polaroid management can exercise some control over the educational choices of employees. Although plan participants interviewed during the study indicated their supervisors had helped them the most in deciding on courses and programs, they also stated that educational counseling had re-affirmed their decisions and assured them that their plans met the guidelines for assistance. At minimum, the required consultation reduces the chances of misunderstanding and disappointment on the part of the employee.

Organizational Factors

Organizational factors are harder to identify and correlate directly with the high rate of employee participation in the Tuition Assistance

Plan. However, several factors were continually cited by management officials and employees as crucial to employee participation in both internal and external education programs.

Corporate expansion appears to be a major factor in employee participation in education. Except for a brief slump in 1974-75, the Polaroid Corporation has been gradually expanding its operations and its workforce since 1948 when the marketing of the Land camera catapulated the company into the ranks of the major American corporations. The last ten years have been a period of particularly rapid growth marked by the opening of a number of new manufacturing plants in the Boston area. This kind of growth means opportunity and mobility for Polaroid's employees, if they can acquire the education and training necessary to fill the new jobs that are opening up. Opportunity for employee growth is especially broad in the technical fields. Skilled technicans, tradespeople, computer specialists, scientists and engineers are needed at Polaroid, and, in fact, the corporation is increasingly orienting its education and training programs in these directions. Interviews with employees currently studying for college degrees under the Tuition Assistance Plan revealed that they are very aware of the areas of opportunity and of the importance for promotion of choosing relevant educational programs and degrees. Since employees indicate that their primary reasons for undertaking education or training are promotion and advancement, it seems reasonable to assume that the existence of a broad range of promotion opportunities plays a major role in their decisions to go back to school.

Corporate management commitment to employee development and to a policy of promoting from within means that education and training are available,

accessible, and highly promoted. Managers and supervisors are expected to actively support and encourage the development of their employees and to bring to their attention opportunities for education and training. The employees interviewed expect support and assistance from their supervisors and they have, in most cases, received it. Moreover, because Polaroid is convinced that continuing education and training for employees is a business necessity and not an expendable fringe benefit, the corporation has developed a wide range of educational services for its employees. As described in previous pages, these include among others:

- Career Counseling Workshops
- Study Skills Workshops
- GED and CLEP Preparation Workshops and Testing
- Diagnostic Testing for Skill Levels in a Variety of Disciplines
- Supervisory Training in Career Development Counseling

These services provide numerous opportunities for contact between employees and supervisors, counselors, trainers, teachers, and managers, during which management and employee goals can be synchronized. The services not only help employees make better decisions about career goals and the utility of further education and training, they assure corporate management some degree of control over the financial and human resources devoted to the employee development effort.

The general corporate climate at Polaroid appears to be highly conducive to awareness of and participation in educational activity. Polaroid impresses an outside observer as a lively, complex and vital organization. Morale seems high, and the employees (at least those interviewed) were committed to their work, confident of their skills and hopeful of continuing growth and development. Many employees appear to

identify strongly with Dr. Land, the maverick inventor-genius who founded the corporation and who exercises considerable influence as Chairman of the Board and Director of Research. Land's commitment to the importance of lifelong learning for individual growth and corporate vitality still shapes Polaroid's policy. According to Education Department staff, Land's ideas continue to influence many aspects of the human resource development program at Polaroid.

Approximately one-half of the workforce is engaged in some kind of educational activity during each year. Consequently, education and training gets talked about at lunch, during breaks, and in the labs. Experiences are shared, encouragement is given, graduations are noted. This kind of atmosphere makes a difference. "Education is just in the air at Polaroid."

Environmental Factors

The most generous tuition assistance plan could not command high participation if there were few accessible schools and colleges for employees to attend. Polaroid is located in an area of the country that is saturated with colleges and universities - including two of the nation's most prestigious academic institutions, Harvard University and the Massachusetts Institute of Technology. As a major academic center, the Boston area provides many opportunities for higher education to its residents, and Polaroid's Tuition Assistance Plan puts a college education within the financial reach of any employee who qualifies for admission. Quality and quantity are available in abundance: Boston University, Tufts, MIT, Harvard, Babson and Northeastern are the stars in a galaxy that includes numerous lesser lights, among them a scattering of community and junior colleges and vocational/technical schools. Such variety ensures that many

needs and interests can be met, and that a school convenient to an employee's home or workplace can be found in most instances. Such a wide range of opportunities would appear to contribute significantly to continued high levels of employee participation in postsecondary education.

VII. CONCLUSION

This study has examined a tuition assistance plan initiated 20 years ago as part of a deliberate effort to stimulate employee participation in education and training activities. The plan has had high-level management support throughout its life, and its provisions and administration have been modified over the years to meet the changing needs of the Polaroid Corporation and its workforce.

The findings of this study (and The Tuition Assistance Plan's long record of sustained and high employee participation) make a strong case for the effectiveness of tuition assistance as a tool for human resource development, particularly when it is an integrated aspect of a systematic and equitable employee development program.

However, any assessment of the success of Polaroid's Tuition Assistance Plan must take into account the extensive internal education and training program which is offered to employees simultaneously with Tuition Assistance Benefits. While 10 percent of Polaroid's eligible domestic workforce participated in the Tuition Assistance Plan in 1978, approximately 50 percent of Polaroid's U.S. employees participated in at least one internal or external educational activity sponsored by Polaroid during this period. One can speculate, on the basis of this information, that the 10 percent rate for Tuition Assistance bears some relationship to the extent of internal education available to employees and to management decisions regarding allocation of resources to the internal and external programs.

What is particularly interesting about Polaroid is that a relatively high rate of participation is sustained in the presence of extensive opportunities for internal educational activity. The findings of this study

indicate that both management officials and plan participants attribute high participation rates to two major plan provisions:

1. 100 percent payment and
2. prepayment of tuition costs,

These findings are consistent with previous research findings (NMI, 1978, Botsman, 1975) that cost of tuition is a major barrier to participation in education, particularly for hourly workers. Both of these provisions can be instituted in other tuition aid programs either unilaterally by management or through negotiated contracts. This study would suggest that the investment yields significant returns for both the company and the employee, particularly in growing and highly technical industries.

The provision of career and educational counseling services and the emphasis on supervisory encouragement of education and training also appear to have an important effect on employee participation in the Tuition Assistance Plan. Again, this confirms the findings of recent studies (NMI, 1978, Fredrickson, et al 1978) that lack of information about job options and educational opportunities is an important factor inhibiting worker participation in education. Services, as the payment provisions of the Plan, could be initiated with relative ease by companies or unions to increase worker involvement in education and training.

High-level management commitment to human resource development and to promotion opportunities for hourly workers are not conditions specific to the Polaroid Corporation or to its Tuition Assistance Plan. They do, however, appear to play a large role as incentives to employee participation in education. Both factors appear crucial to the formation of a working environment that both encourages and rewards employee investment in education and training. This final point may bear some emphasis: Polaroid

is an unusual organization, with a charismatic founder and a history that has the makings of an American legend. Its growth as a corporation has been steady and sustained for over 20 years, and it is a high wage, technologically sophisticated company, dependent for its continuing success on the creativity, innovativeness and technical skills of its employees. While these factors do not reduce the significance of plan provisions and administration in accounting for the success of Polaroid's Tuition Assistance Plan, they do have an important bearing on the high level of employee participation in educational activity.

FOOTNOTES

[1]Carl Olshaker, The Instant Image: Edwin Land and The Polaroid Experience, (New York: Stein and Day, 1978), p. 46.

[2]Ibid, p. 30.

[3]Ibid, p. 68

[4]Polaroid Corporation, "Spectacular Growth takes Polaroid from 730 Main Street, around the world," The Polaroid Newsletter, Vol. XXIII, No. 16, Dec. 8, 1978, p. 6.

[5]Polaroid Corporation, "Building Intellectual Capital: The Role of Education in Industry," (Polaroid Corporation, mimeo, 1978), p. 7.

[6]Polaroid Corporation, Corporate Education and Skills Training, (Cambridge, Mass: Polaroid Corp., undated), p. 5.

[7]Ibid, p. 5.

[8]Ibid, p. 46.

[9]Polaroid Corporation, Polaroid Supervisor Training and Education Program, (Cambridge, Mass: Polaroid Corp., undated).

[10]The Polaroid Corporation, Corporate Education . . ., p. 41.

[11]The Polaroid Corporation, "Building Intellectual Capital . . .," p. 8.

[12]Ibid, p. 16.

[13]Edwin Land, "The Second Great Product of Industry: The Rewarding Working Life," in Science and Human Progress, (Mellon Institute, 1963), p. 110.

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